In the Claims:

Claim 1 (canceled)

2. (previously presented) The method in accordance with claim 24, wherein said value of said chronological progression is determined as extreme values of said detected angular inclinations within a period of time.

3. (previously presented) The method in accordance with claim 24, wherein said value of said chronological progression is an oscillation range of said angular inclinations-formed from extreme values of said detected angular inclinations.

4. (previously presented) The method in accordance with claim 24, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

5. (previously presented) The method in accordance with claim 2, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

6. (previously presented) The method in accordance with claim 3, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential

values formed in step c).

7. (original) The method in accordance with claim 4, further comprising determining a minimum differential value and a maximum differential value from several successive differential values; and

forming a difference between said minimum and maximum differential values that corresponds to said oscillation range.

8. (original) The method in accordance with claim 7, further comprising storing said minimum differential value and said maximum differential value from several successive differential values.

9. (previously presented) The method in accordance with claim 2, further comprising creating a warning signal as said output signal when said determined value for said chronological progression of said change in angular inclinations of said scanning device exceeds a predetermined value.

10. (original) The method in accordance with claim 3, further comprising creating a warning signal when said oscillation range exceeds a predetermined value.

11. (original) The method in accordance with claim 4, further comprising finding successive extreme values in said differential values and determining a time between the detection of said successive extreme values.

12. (original) The method in accordance with claim 11, wherein an oscillation frequency of said scanning device in relation to said scale is determined from said determined time between the detection of said successive extreme values.

13. (original) The method in accordance with claim 12, wherein said successive extreme values are each maximum values.

14. (original) The method in accordance with claim 12, wherein said successive extreme values are each minimum values.

15. (original) The method in accordance with claim 12, wherein said successive extreme values are a maximum value and a minimum value.

16. (currently amended) A linear position measuring system comprising:

at least one linear scale;

a scanning device that moves relative to said at least one linear scale along a linear measuring direction; and

an evaluation module comprising:

a first module for determining several angular inclinations of said scanning device with respect to said linear measuring direction, wherein each of said several angular inclinations is determined from several measured position values; and

a second module for determining a value for a chronological progression of

said several angular inclinations.

17. (previously presented) The position measuring system in accordance with claim 16, wherein said second module comprises a memory device, in which extreme values from several successive angular inclinations are stored.

18. (currently amended) The position measuring system in accordance with claim 16, wherein said scanning device comprises at least two scanning points for scanning said at least one linear scale simultaneously with said at least two scanning points and for forming said measured position values, and wherein said measured position values are provided to said evaluation unit, which processes said measured position values in such a way that a value for said chronological progression of said angular inclinations is present at an output of said evaluation unit.

19. (previously presented) The position measuring system in accordance with claim 17, wherein said scanning device comprises at least two scanning points for scanning said at least one linear scale and for forming measured position values, and wherein said measured position values are provided to said evaluation unit, which processes said measured position values in such a way that a value for said chronological progression of said angular positions is present at an output of said evaluation unit.

20. (original) The position measuring system in accordance with claim 18, wherein said evaluation unit is integrated into said scanning device.

21. (previously presented) The position measuring system in accordance with claim 18, wherein said at least one linear scale comprises two graduated tracks, which are spaced apart from each other transversely to said measuring direction, and respectively one of said scanning points is assigned to one of said two graduated tracks.

22. (previously presented) The position measuring system in accordance with claim 18, wherein said at least one linear scale comprises a first linear scale that is arranged parallel with a second linear scale on a first machine element, and said at least two scanning points are arranged on a second machine element, wherein said first and second machine elements form a gantry structure.

23. (original) The position measuring system in accordance with claim 16, wherein said first module and said second module are formed in a common component.

24. (previously presented) A method for detecting the change of an angular inclination of a scanning device with respect to a linear measuring direction of at least one linear scale of a linear position measuring system, the method comprises:

detecting several angular inclinations of said scanning device in relation to said linear measuring direction of said at least one linear scale by detecting position measurements of said scanning device at several scanning points;

determining a value for a chronological progression of a change in angular inclinations of said scanning device from said detected several angular inclinations of said scanning device; and

generating an output signal representative of said determined value for said chronological progression of said change in angular inclinations of said scanning device.

Claim 25 (canceled)

26. (previously presented) A method for detecting the change of an angular inclination of a scanning device with respect to a linear measuring direction of at least one linear scale of a linear position measuring system, the method comprises:

detecting several angular inclinations of said scanning device in relation to said linear measuring direction of said at least one linear scale by detecting position measurements of said scanning device at several scanning points;

determining a value for a chronological progression of a change in angular inclinations of said scanning device from said detected several angular inclinations of said scanning device; and

issuing to a user a numerical value representative of said determined value for said chronological progression of said change in angular inclinations of said scanning device.

27. (previously presented) A method for detecting the change of an angular inclination of a scanning device with respect to a linear measuring direction of at least one linear scale of a linear position measuring system, the method comprises:

detecting several angular inclinations of said scanning device in relation to said linear measuring direction of said at least one linear scale by detecting position measurements of said scanning device at several scanning points;

determining a value for a chronological progression of a change in angular inclinations of said scanning device from said detected several angular inclinations of said scanning device; and

graphically representing said determined value for said chronological progression of said change in angular inclinations of said scanning device.

Claim 28 (canceled)

29. (previously presented) The method in accordance with claim 26, wherein said value of said chronological progression is determined as extreme values of said detected angular inclinations within a period of time.

30. (previously presented) The method in accordance with claim 26, wherein said value of said chronological progression is an oscillation range of said angular inclinations-formed from extreme values of said detected angular inclinations.

31. (previously presented) The method in accordance with claim 26, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

32. (previously presented) The method in accordance with claim 29, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

33. (previously presented) The method in accordance with claim 30, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning

device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

34. (previously presented) The method in accordance with claim 31, further comprising determining a minimum differential value and a maximum differential value from several successive differential values; and

forming a difference between said minimum and maximum differential values that corresponds to said oscillation range.

35. (previously presented) The method in accordance with claim 34, further comprising storing said minimum differential value and said maximum differential value from several successive differential values.

36. (previously presented) The method in accordance with claim 30, further comprising creating a warning signal when said oscillation range exceeds a predetermined value.

37. (previously presented) The method in accordance with claim 31, further

comprising finding successive extreme values in said differential values and determining a time between the detection of said successive extreme values.

38. (previously presented) The method in accordance with claim 37, wherein an oscillation frequency of said scanning device in relation to said scale is determined from said determined time between the detection of said successive extreme values.

39. (previously presented) The method in accordance with claim 38, wherein said successive extreme values are each maximum values.

40. (previously presented) The method in accordance with claim 38, wherein said successive extreme values are each minimum values.

41. (previously presented) The method in accordance with claim 38, wherein said successive extreme values are a maximum value and a minimum value.

42. (previously presented) The method in accordance with claim 27, wherein said value of said chronological progression is determined as extreme values of said detected angular inclinations within a period of time.

43. (previously presented) The method in accordance with claim 27, wherein said value of said chronological progression is an oscillation range of said angular inclinations-formed from extreme values of said detected angular inclinations.

44. (previously presented) The method in accordance with claim 27, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

45. (previously presented) The method in accordance with claim 42, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

46. (previously presented) The method in accordance with claim 43, further comprising:

a) simultaneously detecting a first measured position value of said scanning device at a first scanning point and detecting a second measured position value of said scanning device at a second scanning point;

b) forming differential values between the simultaneously detected first and second measured position values at both said first scanning point and said second scanning point;

c) performing several repetitions of steps a) and b) to form several differential values; and

d) forming an oscillation range as a value of said chronological progression of change in said angular inclinations of said scanning device from several successive differential values formed in step c).

47. (previously presented) The method in accordance with claim 44, further comprising determining a minimum differential value and a maximum differential value from several successive differential values; and

forming a difference between said minimum and maximum differential values that corresponds to said oscillation range.

48. (previously presented) The method in accordance with claim 47, further comprising storing said minimum differential value and said maximum differential value from several successive differential values.

49. (previously presented) The method in accordance with claim 43, further comprising creating a warning signal when said oscillation range exceeds a predetermined value.

50. (previously presented) The method in accordance with claim 44, further comprising finding successive extreme values in said differential values and determining a time between the detection of said successive extreme values.

51. (previously presented) The method in accordance with claim 50, wherein an oscillation frequency of said scanning device in relation to said scale is determined from said determined time between the detection of said successive extreme values.

52. (previously presented) The method in accordance with claim 51, wherein said successive extreme values are each maximum values.

53. (previously presented) The method in accordance with claim 51, wherein said successive extreme values are each minimum values.

54. (previously presented) The method in accordance with claim 51, wherein said successive extreme values are a maximum value and a minimum value.

55. (new) The position measuring system in accordance with claim 16, wherein said scanning device can scan based on the principle selected from the group consisting of: diffractive scanning, magnetic scanning and capacitive scanning.

56. (new) The method in accordance with claim 24, wherein said scanning device can scan based on the principle selected from the group consisting of: diffractive scanning, magnetic scanning and capacitive scanning.

57. (new) The method in accordance with claim 26, wherein said scanning device can scan based on the principle selected from the group consisting of: diffractive scanning, magnetic scanning and capacitive scanning.

58. (new) The method in accordance with claim 27, wherein said scanning device can scan based on the principle selected from the group consisting of: diffractive scanning, magnetic scanning and capacitive scanning.